



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,425	06/15/2001	Wolfgang Diemer	A91088	1404

30008 7590 08/27/2003

GUDRUN E. HUCKETT
LONSSTR. 53
WUPPERTAL, 42289
GERMANY

EXAMINER

OCAMPO, MARIANNE S

ART UNIT	PAPER NUMBER
----------	--------------

1723

DATE MAILED: 08/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/868,425

Applicant(s)

DIEMER ET AL.

Examiner

Marianne S. Ocampo

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the *pressing device being supported external to the container on the container cover*, as claimed by claim 43, must be shown or the feature should be canceled from the claim. No new matter should be entered.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “47” has been used to designate both the clamps shown in fig. 8 & in page 8, third paragraph discussing Figure 8, and the recess of the drainage bottom plate shown in fig. 1 and in page 5, second paragraph, line 8.
3. **A proposed drawing correction or corrected drawings are required in reply to this Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.**

Claim Objections

4. Claim 28 is objected to because of the following informalities: the number “1” in line 1 should be changed to “21”, since claim 1 has been canceled and claim 21 is the only remaining base claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 21 – 28 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Trumpf et al. (US 5,549,824).

7. Concerning claim 21, Trumpf et al. disclose a module filter (1) comprising:

- a container (20) comprised of at least one container housing (22, 20) and a container bottom (or top in an inverted orientation, 15) and comprising at least one admission (inlet, 2) for a non-filtrate and a discharge (outlet, 24) for a filtrate, and

- at least one filter module (formed by a stack of filter discs 17 and support plates 10 & 11) arranged in the container housing (20) and comprised of several stacked disc-shaped filter cells (17) substantially comprised of filter material (filter fabric 17) and having an inner space wherein the filter cells have a central opening and the central openings form at least one central channel connected in fluid communication with the inner space of the filter cells,
- the central channel connected to the admission/inlet (2) for the non-filtrate and,
- the container housing (20) having a space (23) surrounding the filter cells wherein the space is connected with the discharge/outlet (24) for the filtrate, and,
- circular disc-shaped drainage support bodies (11) arranged between the filter cells (17) wherein the drainage support bodies extend at least approximately over the entire surface area of the filter cells (17),
- the drainage support bodies having a plurality of drainage channels (14, 33) wherein the drainage channels extend toward an outer rim of the discharge support bodies (11), and
- the drainage support bodies having projections (35) projecting axially away from the drainage support bodies (11) and extending in a radial direction of the drainage support bodies, wherein between the projections, intermediate spaces (14) are defined and the intermediate spaces form the drainage channels (14) and configured to remove the filtrate, as in figs. 1 & 5 - 7 and cols. 2 - 5.

8. Regarding claim 22, Trumpf et al. also disclose the filter cells (17) and drainage support bodies (11) having a descending slope extending from the central channel radially outward, as in fig. 1.

9. With respect to claim 23, Trumpf et al. further disclose the drainage support bodies (11) and filter cells (17) being formed as circular disks and having at least substantially the same diameter, as in fig. 1.

10. With regards to claim 24, Trumpf et al. also disclose the drainage channels (14) extending in the form of radial beams to a peripheral rim of the drainage support body (11), as in fig. 6.

11. Concerning claim 25, Trumpf et al. disclose on a side of each one of the filter cells (17) facing the central channel, a support element (10) is provided wherein the support elements (10) are positioned such that the filter material (17) of each one of the filter cells is spaced apart by the support elements (10), respectively wherein the support element (10) being a support ring (defined by annular ring/flange 36) having a penetration (28, 25) which provides fluid communication from the central channel (3) to the inner space (13) of the filter cells (17), respectively, as in figs. 1 - 3 and cols. 2 - 6.

12. With respect to claim 26, Trumpf et al. also disclose the support element (10) having an inner diameter (defined by annular duct 25) matching approximately the diameter of the central opening of each filter cell (17), as in fig. 1.

13. Regarding claim 27, Trumpf et al. further disclose the support element (10) being comprised of a flat annular base body wherein the base body has spaced apart axial projections (31) extending radially strip-shaped on both (top and bottom) sides of the base body, as in figs. 2 – 4 and cols. 4 – 5.

14. With regards to claim 28, Trumpf et al. disclose each one of the filter cells comprised of a lower layer (one filter fabric 17 between a plate 11 and just below plate 10) and an upper layer (another filter fabric between (adjacent its top end) plate 10 and another plate 11 or 16) and a frame (defined by support plate 10, 37 & outer rim portions 38 of plate 11 upon assembly) wherein radially outer rims of the upper and lower layers are connected (affixed thereto) by the frame (38, 37) when assembled, as in figs. 1, 2 & 5 and cols. 3 – 53.

15. Concerning claim 31, Trumpf et al. also disclose the filter further comprising a closure ring/plate (16) arranged axially at (both) ends of the filter module, respectively and coaxially to the central opening wherein the filter module is comprised of several of the filter cells (17, 10) and several drainage support bodies (11) alternatingly stacked on one another, as in fig. 1.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 21 – 29, 31, 35 - 36 and 38 - 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diemer (WO 99/19041) in view of Chu (US 4,704,207) and Trumpf et al. (824).

18. With regards to claim 21, Diemer (WO 041) discloses a module filter (1) comprising:

- a container (2) comprised of at least one container housing (3) and a container bottom (4) and comprising at least one admission (7, *in reverse flow or when flow is from inside to outside of the filter cells*) for a non-filtrate and a discharge (6) for a filtrate, and
- at least one filter module (8,9) arranged in the container housing (3) and comprised of several stacked disc-shaped filter cells (10, 14) substantially comprised of filter material and having an inner space wherein the filter cells have a central opening and the central

openings form at least one central channel (11,15) connected in fluid communication with the inner space of the filter cells,

- the central channel (11, 15) connected to the admission/inlet (7) for the non-filtrate and,
- the container housing (3) having a space surrounding the filter cells (10, 14) wherein the space is connected with the discharge/outlet (6) for the filtrate, as in fig. 1 and pages 6 - 8.

Diemer (WO 041) fails to disclose the following features:

- circular disc-shaped drainage support bodies arranged between the filter cells wherein the drainage support bodies extend at least approximately over the entire surface area of the filter cells, and
- the drainage support bodies having a plurality of drainage channels wherein the drainage channels extend toward an outer rim of the discharge support bodies and
- the drainage support bodies having projections projecting axially away from the drainage support bodies and extending in a radial direction of the drainage support bodies, wherein between the projections, intermediate spaces are defined and form the drainage channels configured to remove the filtrate.

19. Chu (207) teaches a similar filter arrangement to that of Diemer (WO 041) and including:

- circular disc-shaped drainage support bodies (50) arranged between the filter

cells (40) wherein the drainage support bodies extend at least approximately over the entire surface area of the filter cells, and

- the drainage support bodies having a plurality of drainage channels wherein the drainage channels extend toward an outer rim of the discharge support bodies and,
- the drainage support bodies having projections (58a – 58c) projecting axially away from the drainage support bodies wherein between the projections, intermediate spaces are defined and form the drainage channels capable of removing the filtrate, as in figs. 1 and 3 - 4 and cols 3 - 4.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the filter of Diemer (WO 041) by adding the embodiment taught by Chu, in order to provide an improved module filter having additional support structure which prevents distortion and collapse of filter cells and reduces swelling or breaking of filter media when the filter is used or being handled, at the same enhancing radial flow between cells of the fluid filtered/flowing therein (see col. 2, lines 17 – 34 of Chu).

Diemer, as modified by Chu, fails to disclose the projections of the drainage support bodies also extending in a radial direction of the drainage support bodies.

20. Trumpf et al. teach a similar filter to that of Diemer and Chu, the filter of Trumpf et al. including circular disc-shaped drainage support bodies (11) having projections (35) projecting axially away from the drainage support bodies (11) and extending in a radial direction of the

drainage support bodies, and between the projections, intermediate spaces are defined and which form drainage channels (14) and configured to remove the filtrate, as in figs. 1 & 5 - 7 and cols. 2 - 5. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the drainage support bodies of Diemer as modified by Chu, by substituting them with those taught by Trumpf et al., in order to provide an alternative and improved support bodies for the filter cells which provide optimum support for the filter cells/material and provide spacing between filter cells which increases continuously towards the rim of the support bodies (see col. 3, lines 8 - 17 of Trumpf et al.), thereby allowing better and enlarged spacing/drainage channels for flow of filtered fluid therethrough.

21. With regards to claim 22, Diemer as modified by Chu and Trumpf et al., have taught all the limitations of the base claim 21 above, and the prior art also teach the filter cells and drainage support bodies having a descending slope extending from the central channel radially outwardly, as in figs. 3 - 4 of Chu and/or figs. 1 & 5 of Trumpf et al. This type of design enhances the flow of fluid filtered through the cells and into the drainage channels and out towards the drainage/filtrate chamber.

22. Concerning claim 23, Diemer as modified by Chu and Trumpf et al., have taught all the limitations of the base claim 21 above, and the prior art further teach the drainage support bodies (11 of Trumpf or 50 of Chu) and the filter cells (40 of Chu) are formed as circular disks and have substantially the same diameter, as in cols. 3 - 4 of Diemer and in figs. 1 & 3 and in

col. 2 of Chu and col. 2 of Trumpf et al.. The same motivation applied in claim 21 is applied here.

23. With regards to claim 24, Diemer as modified by Chu and Trumpf et al., have taught all the limitations of claims 21 and 23 above, and further teach the drainage channels (14) extending in the form of radial beams to a peripheral rim of the drainage support body (11), as in fig. 6 of Trumpf et al.. The same motivation applied in claim 21 is applied here.

24. With respect to claim 25, Diemer as modified by Chu and Trumpf et al., have taught all the limitations of claims 21 and 23 above, and Diemer fails to disclose a support element provided on a side of each of the filter cells facing the central channel, and the support elements positioned such that the filter material of each one of the filter cells is spaced apart by the support elements, respectively wherein the support element is a support ring having a penetration providing fluid communication from the central channel to the inner space of the filter cells respectively. Chu further teaches each one of the filter cells (40) having a support element (20, 21) provided on a side of the filter cells facing the central channel, and the support elements positioned such that the filter material (10, 15) of each one of the filter cells is spaced apart by the support elements (20, 21), respectively wherein the support element is a support ring having a penetration providing fluid communication from the central channel (42) to the inner space (28) of the filter cells (40), respectively, as in figs. 1 – 3. It is considered obvious to one of ordinary skill in the art to modify the filter of Diemer as modified by Chu and Trumpf et al., by

further adding the embodiment taught by Chu, in order to provide additional support and spacing means for each filter material of the filter cell, thereby preventing the breakage and collapse of the filter material of each cell, as well as provide a chamber for filtered fluid to pass and flow into the central channel of the filter.

25. Regarding claim 26, Diemer, as modified by Chu and Trumpf et al., have taught all the limitations of claim 25 above, and further teach the support element/ring (21) having an inner diameter matching approximately the central opening of the filter cells (40), as in figs. 1 – 3 of Chu. The same motivation applied in claim 25 above is applied here.

26. Concerning claim 27, Diemer, as modified by Chu and Trumpf et al., have taught all the limitations of claim 25 above, and Chu further teach the support ring (20) comprising of a flat annular base body wherein the base body having spaced apart axial projections (20a – 20g) on both sides of the base body, as in figs. 1 – 3 of Chu. Diemer, as modified by Chu, fail to disclose the axial projections of the support ring extending radially strip-shaped. Trumpf et al further teach a support element (10) being comprised of a flat annular base body wherein the base body has spaced apart axial projections (31) extending radially strip-shaped on both (top and bottom) sides of the base body, as in figs. 2 – 4 and cols. 4 – 5. It is considered obvious to one of ordinary skill in the art to modify the filter of Diemer as modified by Chu and Trumpf et al., by adding the embodiment taught by Trumpf et al., in order to provide an alternative and improved

design for the support element/ring of the filter which provides support for the filter material of each filter cell but also provides a guide/channel for fluid to flow radially out of the filter cells.

27. With respect to claim 28, Diemer, as modified by Chu and Trumpf et al., have taught all the limitations of claim 27 above, and Chu further teach each one of the filter cells comprising an upper layer (10) and a lower layer (15) of the filter material and a frame (18), wherein radially outer rims of the upper and lower layers (10 & 15) are connected by the frame (18) to one another, as in figs. 1 – 4 of Chu. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the filter of Diemer, as modified by Chu and Trumpf et al., by adding the embodiment of the filter cells of Chu, in order to provide an alternative design for the filter cells which provide sufficient surface area for the filtration of fluids therethrough and provide filter media which would not easily break or collapse compared to those of Diemer without support elements and frames.

28. With regards to claim 29, Diemer, as modified by Chu and Trumpf et al., have taught all the limitations of claim 29 above, and Chu further teach the filter material (10, 15) being a nonwoven filter cloth/disc, as in col. 3, lines 28 – 58.

29. Regarding claim 31, Diemer (WO 041), as modified by Chu and Trumpf et al., have taught all the limitations of claim 21 above. Diemer further discloses the filter comprising a closure ring (12, 13 or 16, 17) arranged axially at ends of the filter module (8, 9) and coaxially to

the central opening, as in fig. 1 of Diemer, and Diemer, as modified by Chu and Trumpf et al. further teach the filter module comprising several filter cells (40) and several drainage support bodies (50 of Chu or 11 of Trumpf et al) alternatingly stacked one on another, as in fig. 3 of Chu and fig. 1 of Trumpf et al. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the filter of Diemer as modified by Chu and Trumpf et al., in order to provide an improved filter which provides additional support and improved drainage for each filter cell in the filter module.

30. Concerning claim 35, Diemer, as modified by Chu and Trumpf et al., have taught all the limitations of claim 21 above. Diemer fails to disclose the following features:

- a central tie rod arranged in the central channel,
- a fastening arrangement and the central tie rod is supported by the fastening arrangement on the container bottom and
- a drainage cover plate arranged at an upper end of the central tie rod.

Chu further teaches the filter further having a central tie rod arranged in the central channel (42), a fastening arrangement and the central tie rod is supported by the fastening arrangement on the container bottom and a drainage cover plate arranged at an upper end of the central tie rod, as in fig. 1 of Chu. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the filter of Diemer, as modified by Chu and Trumpf et al., by further adding the embodiment taught by Chu, in order to provide an alternative and quick means of

assembling/installing the filter module within the container/housing, which does not require removal of too many parts.

31. Concerning claim 36, Diemer, as modified by Chu and Trumpf et al., have taught all the limitations of claim 35 above. Diemer also discloses the container having a container cover (2), but fails to disclose the drainage cover plate being supported by a support cap with support ribs on the container cover. Trumpf et al. further teach a container (20 of Trumpf et al.) having a container cover (22, lower end) and a drainage cover plate (closure plate 16 next to part 19) being supported by a support cap (19) with support ribs (at least one is shown located on its lower surface closest to the outlet 24) on the container cover (22), as in fig. 1. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the container of Diemer, as modified by Chu and Trumpf et al., by further adding the embodiment taught by Trumpf et al., in order to provide an alternative design for the container/housing for the filter module which provides sufficient anchoring or support for the filter module within the container.

32. With respect to claim 38, Diemer, as modified by Chu and Trumpf et al., have taught all the limitations of claim 35 above. Diemer also discloses several (two) of filter modules (8 & 9) are aligned with central openings axially above one another and secured to a drainage cover plate (4) in the container (2, 3), as in fig. 1.

33. Concerning claim 39, Diemer, as modified by Chu and Trumpf et al., have taught all the limitations of claims 21, 35 and 38 above. Diemer also discloses the container having a container cover (2), but fails to disclose the drainage cover plate being supported by a support cap with support ribs on the container cover. Trumpf et al. further teach a container (20 of Trumpf et al.) having a container cover (22, lower end) and a drainage cover plate (closure plate 16 next to part 19) being supported by a support cap (19) with support ribs (at least one is shown located on its lower surface closest to the outlet 24) on the container cover (22), as in fig. 1. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the container of Diemer, as modified by Chu and Trumpf et al., by further adding the embodiment taught by Trumpf et al., in order to provide an alternative design for the container/housing for the filter module which provides sufficient anchoring or support for the filter module within the container.

34. Claim 30 and 32 – 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diemer (WO 041), Chu and Trumpf et al., as applied to claims 28 and 31, respectively above, and further in view of Diemer (WO 99/19042).

35. Regarding claim 30, Diemer as modified by Chu and Trumpf et al., have taught the limitations of claim 28 above, but fail to further teach each one of the frames comprising an underside with support knobs and being supported on one another by the support knobs. Diemer (WO 042) teaches a filter module (1) comprising several stacked filter cells (2), similar to those

of Diemer as modified by Chu and Trumpf et al, wherein each filter cell (2) having an upper layer (5) and a lower layer (5) and a frame (6), and each one of the frames (6) comprising an underside with support knobs (13) and being supported on one another by the support knobs (13), as in fig. 1 and page 5. It is considered obvious to one ordinary skill in the art at the time of the invention to modify the filter frames of the filter cells of Diemer (WO 041), as modified by Chu and Trumpf et al., by adding the embodiment taught by Diemer (WO 042), in order to provide an alternative but improved design for the filter frame which provides additional support and stability to the filter cells, but also provide uniform spacing between filter cells.

36. With regards to claim 32, Diemer (WO 041), as modified by Chu and Trumpf et al., have taught the limitations of claim 31 above. Diemer, as modified by Chu and Trumpf et al., fail to teach the filter further comprising a securing element configured to secure alternately stacked filter cells and drainage bodies and receive tensile forces, wherein the securing element is arranged at a side of the stacked filter cells and drainage bodies facing the central channel. Diemer (WO 042) further teach a securing element (10) configured to secure alternately stacked filter cells (2) and drainage bodies (3) and receive tensile forces, wherein the securing element (10) is arranged at a side of the stacked filter cells and drainage bodies facing the central channel (15), as in fig. 1 and page 6. It is considered obvious to one ordinary skill in the art at the time of the invention to modify the filter of Diemer (WO 041), as modified by Chu and Trumpf et al., by adding the embodiment taught by Diemer (WO 042), in order to provide a support structure for securing and maintaining the stacked configuration of the filter cells and

provide a centering means for the cells, thereby maintaining their stacked configuration during use and handling of the filter module (see page 6 of WO 042).

37. With respect to claim 33, Diemer (WO 041), as modified by Chu, Trumpf et al. and Diemer (WO 042), have taught the limitations of claim 32 above, and Diemer (WO 042) further teaches the securing element (10) being a sleeve comprised of metal (high grade steel) and having a mantle surface provided with a plurality of openings (14) and having end faces (11) and connected with the end faces (11) positive-lockingly with closure rings (7, 9), as in figs. 1 - 2 and page 6. The same motivation applied in claim 32 above is applied here.

38. Regarding claim 34, Diemer (WO 041), as modified by Chu, Trumpf et al. and Diemer (WO 042), have taught the limitations of claim 33 above, and Diemer (WO 042) further teaches another embodiment for the closure rings (17 or 31), in which the closure rings (17 or 31) have a recess (23) in the form of an annular ring, which is configured to receive a sealing ring (19 or 32), as in figs. 3 - 4 and pages 7 - 9. It is considered obvious to one ordinary skill in the art at the time of the invention to modify the filter of Diemer (WO 041), as modified by Chu, Trumpf et al. and Diemer (WO 042), by further adding the embodiment of the closure rings taught by Diemer (WO 042), in order to provide alternative designs for the closure rings which provides a leak-proof engagement between the securing element and the closure rings, thereby preventing unfiltered fluid leaking through the sleeve and closure ring connection, as well as

provide a secured engagement between the sleeve/securing element and closure rings which would not easily be disconnected or disengaged.

39. Claim 37, 40 – 42 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diemer (WO 041), Chu and Trumpf et al., as applied to claims 35 and 38, respectively above, and further in view of Fleck et al. (US 2,692,686).

40. With regards to claims 37 and 40, Diemer (WO 041), as modified by Chu and Trumpf et al., have taught the limitations of claims 35 & 38 above, but fail to further teach the drainage cover plate being a press plate provided with an axial tie rod. Fleck et al. teach a similar filter to that of Diemer (WO 041) as modified by Chu and Trumpf et al., wherein the filter of Fleck et al. includes a drainage cover plate (15) which is a press plate provided with an axial tie rod (6), as in figs. 1 – 2. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the filter of Diemer (WO 041), as modified by Chu and Trumpf et al., by adding embodiment taught by Fleck et al., in order to provide a means for controlling movement (due to swelling or pressure exerted by fluid being filtered) of the filter materials of the cells of the module filter, at the same time, prevent collapse or breakage of the filter material.

41. Regarding claim 41, Diemer (WO 041), as modified by Chu and Trumpf et al., have taught the limitations of claim 38 above but fail to teach the filter further comprising a drainage bottom plate arranged between the container bottom and a lowermost one of the filter modules

and the drainage bottom plate having a recess in an area neighboring the discharge. Fleck et al. also teach the filter having a container (1) having a bottom and a discharge (6, 3) and a drainage bottom plate (7) arranged between the container bottom and a filter module comprising a stack of several filter cells (13, 11), and the drainage bottom plate (7) having a recess (opening which circumscribe the discharge tube 6) in an area neighboring the discharge (6), as in fig. 1. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the filter of Diemer (WO 041), as modified by Chu and Trumpf et al., by adding embodiment taught by Fleck et al., in order to provide a means for preventing mixing of filtered fluid exiting the filter cells via the discharge with unfiltered fluid entering the container.

42. Regarding claim 42, Diemer (WO 041), as modified by Chu and Trumpf et al., have taught the limitations of claim 38 above but fail to teach a pressing device configured to secure the filter modules (8 and 9 of Diemer) between the drainage cover plate and a drainage bottom plate. Fleck et al. also teach a pressing device (14) configured to secure at least one filter module (stack of filter cells, 11,13) between a drainage cover plate (15) and a drainage bottom plate (7), as in fig. 1. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the filter of Diemer (WO 041), as modified by Chu and Trumpf et al., by adding embodiment taught by Fleck et al., in order to provide not only a means for preventing mixing of filtered fluid exiting the filter cells via the discharge with unfiltered fluid entering the container, but as well as providing a means for controlling movement (due to swelling or pressure exerted

by fluid being filtered) of the filter materials of the cells of the module filter, at the same time, prevent collapse or breakage of the filter material.

43. With respect to claim 44, Diemer (WO 041), as modified by Chu, Trumpf et al. and Fleck et al., have taught the limitations of claim 42 above, and Fleck et al. further teach the pressing device (14) being supported inside the container (1, 5) on the container bottom (1) by a central rod (6) and a fastening arrangement (23), as in fig. 1. The same motivation applied in claim 42 above is being applied here.

44. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Diemer (WO 041), Chu, Trumpf et al. and Fleck et al., as applied to claim 42 above, and further in view of Vogel (US 4,392,956).

45. Concerning claim 43, Diemer (WO 041), as modified by Chu, Trumpf et al. and Fleck et al., have taught the limitations of claim 42 above, but fail to teach the pressing device being supported external to the container on the container cover. Vogel teaches a filter comprising a container (12) with a cover and at least some portions of the pressing device (52, 50, 46, 38) being supported external to the container/container cover (12), as in fig. 3. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the location of the pressing device of Diemer (WO 041), as modified by Chu, Trumpf et al. and Fleck et al., from inside to outside of the container, as taught by Vogel, in order to provide an

Art Unit: 1723

alternative design which allows for a more compact or smaller container/housing for the filter modules. The case law, *In re Japikse*, 86 USPQ 70 (CCPA 1950), has established that a prima facie case of obviousness exists and that the limitation of *having the pressing device supported external of the container as claimed (instead of being inside as taught by the prior art)*, is not considered an invention since the applicants are merely shifting the location of the pressing device to a different location and the operation (i.e. ability to press the filter cells) of the module filter of the prior art would not be modified by doing so.

Conclusion

46. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents 4,737,285 (Krulitsch et al.), 4,855,0662 (Oelbermann), 2,755,937 & 2,475,833 (both to Gunn), 2,604,994 (Vocelka), 2,548,584 (Briggs) and 4,347,208 (Southall).

47. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne S. Ocampo whose telephone number is (703) 305-1039. The examiner can normally be reached on Mondays to Fridays from 8:30 A.M. to 4:30 P.M..

Art Unit: 1723

48. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (703) 308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

49. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

ms
M.S.O.

Walker
W. L. WALKER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700